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Amending the outputs for Transpower's demand response programme in the Upper North Island

Decision and reasons paper

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Executive Summary

- X1 Transpower submitted an application to the Commerce Commission to expand the geographical area within which it can test its demand response initiatives.
- X2 These initiatives are part of the output requirements of Transpower's Upper North Island Dynamic Reactive Support Project (the UNI DRS Project), which requires Transpower to undertake a range of demand side initiatives. This project was approved by the former Electricity Commission in 2010 and closes in 2015.
- X3 We have decided to amend the UNI DRS Project output to expand the geographical scope of Transpower's demand response programme so that it can be tested throughout New Zealand.
- X4 In making our decision we have assessed Transpower's application in line with the regulatory framework which operates under Part 4 of the Commerce Act 1986 (the Act).
- X5 Our assessment found that, overall, expanding the geographical area will promote the purpose of Part 4.
- X6 In reaching our decision to approve Transpower's proposal we have looked to preserve the incentives on Transpower to innovate and improve efficiency by:
 - X6.1 allowing Transpower the opportunity to innovate by testing new ideas in a way that is reflective of changing market conditions,
 - X6.2 ensuring Transpower can develop products that meet consumer needs across New Zealand, and
 - X6.3 allowing the demand response programme to be structured in a way to best test the potential for Transpower to improve efficiency through demand side initiatives.
- X7 Given the potential for the demand response market to defer transmission requirements and potentially lower costs, especially in markets outside of the Upper North Island, deciding against the expansion of the approved testing location in this instance would not be promoting the purpose of Part 4.

1. Introduction

Purpose of this paper

- 1.1 This paper explains our decision to approve Transpower's application to amend the UNI DRS Project output of its Upper North Island Dynamic Reactive Support Project by expanding the geographical area of the demand response testing programme to the whole of New Zealand.¹

Why Transpower needs our approval to amend the outputs for the project

- 1.2 Transpower must seek our approval to amend the components of approved major capex projects, including the outputs that Transpower is required to meet.
- 1.3 In this instance, Transpower is extending the region in which the programme can be tested.

The regulation that currently applies to Transpower

- 1.4 The price and quality of the service that Transpower supplies to its consumers is regulated under Part 4 of the Act. This service is the delivery of electricity through the national grid (also called the transmission network). The national grid connects the generators of electricity to large electricity consumers and to electricity distribution businesses, who then connect to smaller electricity consumers.
- 1.5 The Commission is responsible for regulating Transpower under the Act.
- 1.6 The rules relating to Transpower's major capital investments are explicitly addressed in the Transpower Capital Expenditure Input Methodology Determination (Capex IM).²
- 1.7 The Capex IM requires Transpower to seek approval for major capital projects in the national grid, and to deliver these projects to a set of approved components in order to be able to recover the cost of its investments in major capital projects from consumers.³
- 1.8 If Transpower does not deliver the components as per the approved proposal, Transpower has to apply to us to approve the amendment of any respective component it wishes to change. If we decide not to amend the component, Transpower may not be able to recover the full cost of its investment.

¹ The demand response programme was developed as part of Transpower's Upper North Island Dynamic Reactive Support Investment Proposal.

² Commerce Commission *Re Transpower Capital Expenditure Input Methodology Determination* [2012] NZCC 2 (31 January 2012).

³ These components are set out in clause 3.3.4(1) of the Capex IM.

- 1.9 The detailed regulatory framework for making amendments to outputs is set out in Attachment C.

What outputs Transpower seeks to amend

- 1.10 The current approved outputs of the UNI DRS Project allow Transpower to test demand response in the Upper North Island.
- 1.11 Transpower has applied to amend the outputs of the UNI DRS Project to expand the geographical area of its testing to the whole of New Zealand.

Transpower's Upper North Island Dynamic Reactive Support project was approved by the former Electricity Authority in 2010

- 1.12 In 2010 the Electricity Authority originally approved an allowance of \$110.2 million to deliver a number of outputs as part of the Upper North Island Dynamic Reactive Support grid investment project (UNI DRS Project). One of these outputs was to undertake a range of demand side initiatives in the Upper North Island region. The demand response testing programme is a required output of this project.

2. Our decision and reasons on whether to amend the outputs

Our decision is to amend the outputs

- 2.1 We have decided to amend the outputs to expand the geographical area of Transpower's demand response programme to the whole of New Zealand. The reasons for our decision are outlined below.
- 2.2 The regulatory framework under which we assessed Transpower's application in order to reach our decision is outlined in Attachment B.

In reaching our decision to approve Transpower's proposal we have looked to preserve the incentives on Transpower to innovate and improve efficiency

- 2.3 In agreeing to Transpower expanding its geographical area we have sought an appropriate balance between:
 - 2.3.1 allowing Transpower the opportunity to innovate by testing new ideas in a way that is reflective of changing market conditions,
 - 2.3.2 ensuring Transpower can develop products that meet consumer needs across New Zealand, and
 - 2.3.3 allowing the programme to be structured in a way to best test the potential for Transpower to improve efficiency through demand side initiatives.
- 2.4 Our decision is in line with the purpose of Part 4 to promote investment in innovative products to improve efficiency. We consider that a functional demand response market can provide efficiency in managing the core grid.
- 2.5 This amendment allows Transpower to gather more information about the potential for a demand side market at a cost that is no greater than the approved budget for a testing programme of lesser scope. Specifically we believe:
 - 2.5.1 it will enable a more robust testing of demand response, and
 - 2.5.2 it will provide Transpower with a better understanding of how demand response can be used as a non-transmission solution.

The key factors relevant to the proposed amendment

- 2.6 In our view, the key factor leading to this application was the need for Transpower to manage investment in its network given the current uncertainty of demand growth within New Zealand.
- 2.7 At the time of the original project approval it was thought that demand side initiatives may be used to manage the risk of a delay to the commissioning of the NIGUP project.

- 2.8 Since the application was approved there has been a flattening of demand growth that was not reasonably foreseeable given historic trends or other indicators. This change, which has been driven by macro-economic conditions, was outside the control of Transpower.
- 2.9 We consider an appropriate strategy to respond to this change in electricity demand conditions is to expand the geographical area of its demand response testing. This allows Transpower to consider how economically and practically feasible demand side solutions may be throughout New Zealand to mitigate unnecessary investment in additional transmission capacity.
- 2.10 It should also be noted that initial demand response testing carried out by Transpower identified little appetite for demand side response, largely because of the barriers to participation. From these findings, Transpower developed a market interface tool, called the Demand Response Management System, and reduced the minimum size of participation. These refinements have made it realistically possible for a wide range of participants to take part in the demand response programme.

Transpower has not sought an increase in the approved allowance

- 2.11 Transpower decides whether and when to call for responses from demand response providers, as well as the price that is paid to the providers that respond.
- 2.12 As such, Transpower has control over the cost of the demand response testing. Transpower has the ability to manage the programme so it does not go over budget, despite widening the geographical area.
- 2.13 This amendment does not increase the approved allowance that Transpower can recover from consumers. Transpower has advised that it will be able to perform the intended testing within the original approval of the UNI DRS Project.

The scope of this decision

- 2.14 We are required to assess Transpower's application to amend the outputs of the UNI DRS Project in accordance with the rules set out in the Capex IM.⁴
- 2.15 We are limited to accepting or rejecting the proposed output in Transpower's application to expand the geographical area of the testing.
- 2.16 We are precluded from reviewing the original former Electricity Commission approval of the UNI DRS Project, as well as any other components of the UNI DRS Project that Transpower has not applied for.

⁴ The regulatory framework under which we assessed Transpower's application in order to reach our decision is outlined in Attachment C.

- 2.16.1 The Capex IM allows us to adjust any of the P50, commissioning date assumption and completion date assumption where relevant to do so as a consequence of an approved change in project outputs. However, in this instance we will not be making any such adjustments since these components are not impacted by the proposed changes in outputs.
- 2.17 We are also precluded from assessing the merits of the demand response testing programme or how Transpower will participate in the demand side markets after its testing programme comes to an end. While outside the scope of this amendment, we recognise the potential for demand side initiatives created for regulatory purposes to be utilised in non-regulated markets.
- 2.18 Our cost-allocation input methodology address issues that may arise in relation to regulated assets that may be used for any non-regulated purpose.

Attachment A: What is demand response?

- A1 Demand response is a method that can be used to disconnect non-essential electricity demand in order to maintain electricity supply when either generation or line constraints mean supply is not able to meet demand.⁵
- A2 Transpower sends a signal to contracted demand response providers to reduce their electricity demand for a period of time.⁶ The providers that respond are paid for reducing their demand.
- A3 Transpower is testing two demand response products.
- A3.1 a security product. This product provides an agreed level of demand response at a fixed price. The provider of this product must respond to a call.
- A3.2 a price responsive product. This product allows the provider to bid in quantity and price in response to an offer by Transpower. The provider is not obliged to bid in response to an offer by Transpower.
- A4 The demand response products Transpower are testing have a number of potential benefits, including:
- A4.1 deferral of transmission investment, which means lower electricity prices for consumers,
- A4.2 increased transmission reliability, whereby non-essential electricity loads can be switched off or reduced when there is a generation or transmission constraint, maintaining electricity supply to essential services,
- A4.3 increased energy efficiency, which is achieved through reducing electricity demand and therefore the need to expand the current transmission grid, and
- A4.4 allowing consumers to manage their electricity pricing risk.

⁵ Other methods also allow this. The unique feature of demand response is that it allows consumers to voluntarily reduce demand in response to price signals.

⁶ Demand response providers are electricity consumers with the capability to receive and respond to Transpower's requests to decrease electricity demand.

Attachment B: Summary of our evaluation

B1 In this attachment we present a summary of our evaluation of Transpower's proposal against the evaluation criteria and process requirements set out in the Capex IM.

Whether the proposal is consistent with the input methodologies that apply to Transpower

B2 We consider that the proposed amendment is consistent with the Capex IM and the Transpower (Input Methodologies) Determination [2012] NZCC 17 (29 June 2012).

The extent that the proposed amendment promotes the purpose of Part 4 of the Act

B3 The proposed amendment will enable Transpower to develop a product that can enable it to better consider non-transmission solutions on a national basis and overall promote the purpose of Part 4.⁷

B4 In reaching our decision to approve Transpower's proposal we have looked to promote the purpose of Part 4 of the Act by preserving the incentives on Transpower to innovate and improve efficiency through:

B4.1 allowing Transpower the opportunity to innovate by testing new ideas in a way that is reflective of changing market conditions,

B4.2 ensuring Transpower can develop products that meet consumer needs across New Zealand, and

B4.3 allowing the programme to be structured in a way to best test the potential for Transpower to improve efficiency through demand side initiatives.

B5 Given the potential for the demand response market to defer transmission requirements and potentially lower costs, especially in markets outside of the Upper North Island, deciding against the expansion of the approved testing location in this instance would not be promoting the purpose of Part 4.

Whether the data, analysis and assumptions underpinning the application are fit for purpose

B6 We considered the information provided by Transpower is fit for us to be able to assess the application. To assist our review we sought additional information from Transpower.⁸

⁷ Refer Attachment C for the test that we apply to ensure what is proposed promotes the purpose of Part 4 of the Act.

⁸ Our questions and Transpower's responses to those questions are available on our website.

B7 As this is a testing programme we do not, at this stage, expect Transpower to quantify the financial benefits it expects from the trial. However should Transpower apply for any additional regulatory funding to participate in the demand side market post testing then we would require Transpower to identify the net market benefit of that funding.

The key factors relevant to the proposed amendment

B8 In our view, the key factor leading to this application was the need for Transpower to manage investment in its network given the current uncertainty of demand growth within New Zealand.⁹

B9 At the time of the original project approval it was thought that demand side initiatives may be used to manage the risk of a delay to the commissioning of the NIGUP project.

B10 Since the application was approved there has been a flattening of demand growth that was not reasonably foreseeable given historic trends or other indicators. This change, which has been driven by macro-economic conditions, was outside the control of Transpower.

B11 We consider an appropriate strategy to respond to this change in electricity demand conditions is to expand the geographical area of its demand response testing. This allows Transpower to consider how economically and practically feasible demand side solutions may be throughout New Zealand to mitigate unnecessary investment in additional transmission capacity.

B12 It should also be noted that initial demand response testing carried out by Transpower identified little appetite for demand side response, largely because of the barriers to participation. From these findings, Transpower developed a market interface tool, called the Demand Response Management System, and reduced the minimum size of participation. These refinements have made it realistically possible for a wide range of participants to take part in the demand response programme.

The effect of the amendment on the expected net electricity market benefit

B13 We see no reason to disagree with Transpower that the proposed amendment does not reflect a change to any of the assumptions made in its original investment proposal.¹⁰ If any changes have occurred, we do not believe these would be material given that the UNI DSR Project ends in 2015.

⁹ As part of our evaluation we consider whether the key factor was foreseeable and within Transpower's control and how Transpower mitigated the key factors outside its control.

¹⁰ Transpower's application for amendment of Outputs for the Upper North Island Dynamic Reactive Support Investment Proposal, (13 August 2013) paragraph H18(3), page 9.

The extent to which Transpower has incurred capital expenditure by the date of application

B14 While Transpower has already incurred expenditure, we consider that the spending to date has been appropriate, and we do not consider that it has any bearing on our decision.

Is the proposal consistent with the process requirements in the Capex IM?

B15 We consider that the proposal is consistent with the Capex IM and that it meets the necessary process requirements.

B15.1 Transpower satisfied the timing requirements of the Capex IM.¹¹
Transpower submitted its application on 13 August 2013, which was within the timeframes specified in the Capex IM.

B15.2 Transpower satisfied the information requirements of the Capex IM.¹²

B15.3 Transpower satisfied the certification requirements of the Capex IM.¹³

¹¹ Clause 7.4.2(1).

¹² Clause 7.4.2(3)(c) and Schedule H, Division 3.

¹³ Clause 7.4.2(3)(4) and clause 9.2.1.

Attachment C: Regulatory framework

- C1 Transpower is required to seek approval from the Commission for major capital expenditure projects. It is also required to seek approval to amend certain parts of an approved major capital expenditure project, including outputs. These approvals are sought under the Transpower Capital Expenditure Input Methodology (Capex IM).¹⁴
- C2 This chapter sets out the legal framework against which we have evaluated Transpower's application to amend the outputs.

How we evaluate applications to amend the major capex project outputs

- C3 Transpower can apply for amendments to previously approved major capex projects prior to the project approval expiry date.¹⁵
- C4 Allowing amendments recognises that major capex projects may be planned well in advance. The potentially large lead times can create uncertainty to the costs, timings and requirements of an investment. Likewise, given the nature of major capex projects, there will likely be factors that are outside Transpower's control that will affect projects. Transpower is limited in applying for amendments to only certain components of the approved project.¹⁶ One such component is the outputs.¹⁷
- C5 We cannot make a decision whether to approve or reject an amendment to outputs until we have carried out the evaluation of the application, and any further information we requested from Transpower, in accordance with Part 6 of the Capex IM.¹⁸
- C6 The evaluation for an amendment to a major capex project under Part 6 of the Capex IM covers two main areas. These areas are:
- C6.1 an evaluation of the application in accordance with the general criteria,¹⁹ and
 - C6.2 an evaluation of matters specific to the application, in accordance with the specific evaluation criteria.²⁰

¹⁴ Commerce Commission *Re Transpower Capital Expenditure Input Methodology Determination* [2012] NZCC 2 (31 January 2012).

¹⁵ Capex IM, clause 3.3.4(1).

¹⁶ Capex IM, clause 3.3.4(1).

¹⁷ Capex IM, clause 3.3.4(1)(d).

¹⁸ Capex IM, clause 3.3.4(2)(c).

¹⁹ Capex IM, clause 6.1.1(2)(a) to (c).

- C7 In our evaluation, we have the ability to take into account any additional information that we consider relevant.²¹
- C8 We also need to assess whether Transpower has met the process requirements of the Capex IM in making the application.²² These include compliance with the timeframes and the information and certification requirements.

The extent to which the proposal promotes the purpose of Part 4 is the overarching test

- C9 As part of the general criteria, the Commission must consider the “the extent to which what is proposed will promote the purpose of Part 4 of the Act” (clause 6.1.1(2)(b)). The Capex IM was enacted under the umbrella of requirements set by Part 4 of the Act, and as such is in accordance with Part 4. The provisions of the Capex IM will ultimately be construed and applied in a way that promotes the Part 4 purpose. Clause 6.1.1(2)(b) is a restatement of this overriding test.

The purpose of Part 4 of the Act

- C10 The purpose of Part 4 of the Act is to promote the long-term benefit of consumers in markets where there is little or no competition, and little or no likelihood of a substantial increase in competition.²³ ‘Competition’ means ‘workable or effective competition’.²⁴
- C11 To promote workable or effective competition that is in the long term interests of consumers, we must promote outcomes in regulated markets that are consistent with outcomes in competitive markets. The four limbs of the Part 4 purpose statement set out specific outcomes that we should promote, so that regulated suppliers, including Transpower:
- C11.1 have incentives to innovate and invest,²⁵
 - C11.2 have incentives to improve efficiency and provide services at a quality that reflects consumer demands,²⁶
 - C11.3 share the benefits of efficiency gains with consumers, including through lower prices,²⁷ and

²⁰ Capex IM, clause 6.1.1(5)(a) to (d).

²¹ Capex IM, clause 6.1.1(1)(a)(ii).

²² Capex IM, clause 3.3.4(2)(a) requires the Transpower complies with clause 7.4.2.

²³ Section 52A(1).

²⁴ Section 3(1).

²⁵ Section 52A(1)(a).

²⁶ Section 52A(1)(b).

- C11.4 are limited in their ability to extract excessive profits.²⁸
- C12 In our view, the correct legal test of the Part 4 purpose statement is to promote outcomes consistent with workably competitive markets. The specific outcomes in limbs (a)-(d) are integral to promoting the long-term benefit of consumers, and reflect the key areas of supplier performance that characterise workable competition.
- C13 In order to determine whether the central purpose (long-term benefit of consumers) is to be fulfilled, it is appropriate to inquire whether outcomes consistent with outcomes produced in workably competitive markets are being promoted so that the section 52A(1)(a) to (d) requirements are met. This is how we have interpreted and applied the purpose of Part 4.
- C14 We do not think that the limbs of the purpose statement preclude us from, more generally, considering the concept or practice of workable competition or outcomes in workably competitive markets. This is because:
- C14.1 if that was the case, the Part 4 purpose statement should simply be the four limbs in section 52A(1)(a)-(d), and the remaining words in section 52A(1) could be deleted from the Act,
- C14.2 where the four limbs at section 52A(1)(a)-(d) do not provide us with the answer about key choices we have to make (for instance the allocation of risk), we act consistently with outcomes that promote (a)-(d), but seek further guidance from workably competitive markets more generally, and
- C14.3 this approach is consistent with the approach that we took to determining suppliers' starting regulatory asset base ('RAB') when formulating our input methodologies at the start of the Part 4 regulatory regime.

The Commission's discretion when making decisions on project output amendments

- C15 The Commission's discretion when making decisions on project output amendments is limited by the propose/respond framework applying in such circumstances under clause 3.3.4(4)(d) of the Capex IM.
- C16 Upon carrying out its evaluation of Transpower's proposal, the Commission may either:
- C16.1 decide to approve the amendment as proposed by Transpower in its application, or

²⁷ Section 52A(1)(c).

²⁸ Section 52A(1)(d).

- C16.2 decide to reject the amendment as proposed by Transpower in its application.
- C17 When applying the evaluation criteria in Part 6, the Commission has the discretion to assess the application by weighing up the extent to which the proposal is promoting the purpose of Part 4 against the foreseeability and controllability of each key factor that led to the application. In the absence of an absolute standard against which to assess a proposal, the regime requires us to consider the merits of a proposal and make a relativist judgment.
- C18 Where the proposed change in outputs has an impact on the major capex allowance or the relevant project timeframes, the Commission may also decide to adjust any of the following:
- C18.1 P50,
- C18.2 commissioning date assumption,
- C18.3 completion date assumption.
- C19 The Capex IM recognises that circumstances around a project may change and the approval may need to be updated as better information becomes available. This may include cost information, and changes to technology or circumstances that are not within Transpower's control. When the uncertainties, or changes in circumstances or the environment, affect the project, it may be appropriate to adjust the approval accordingly.

What the Capex IM does not allow us to do

- C20 The Capex IM sets the framework for our treatment of Transpower's capital expenditure. This restricts our decision on the application to amend the outputs as requested in Transpower's application.
- C21 The Capex IM gives us no scope to reopen the original approval for a major capex project. Under the amendment mechanism, Transpower is only applying to the Commission for an amendment of a project output component of the project.
- C22 The Capex IM does not allow us to make a decision that goes against the purpose of Part 4 of the Act, or is inconsistent with the other relevant input methodologies.
- C23 The Capex IM gives us no scope to look at Transpower's WACC.

Attachment D: Responses to our consultation process

D1 We received submissions on Transpower's application and supporting information from:²⁹

D1.1 John Irving, and

D1.2 EnerNOC.

D2 We received cross-submissions from:

D2.1 Transpower.

Views expressed by interested parties

D3 Submitters generally supported the development of the demand response market and no concerns were raised around the widening of the geographical area for the demand side initiatives testing programme.

D4 However, a potential concern was raised by EnerNOC around Transpower gaining competitive advantage by using their intellectual property and systems, developed for regulatory purposes, in more general demand response markets that are not regulated.

D5 While we recognise the potential for concern, we note that this issue is not directly applicable to the amendment that we are required to assess. However we note:

D5.1 Our cost-allocation input methodology addresses any issues that may arise in relation to regulated assets that may be used for any non-regulatory purpose.

D5.2 The programme is only a testing programme. Transpower is limited to testing the potential for this market.

D5.3 Transpower has signalled in its cross-submission that it is not considering becoming a market participant outside of regulatory markets. It plans to establish demand response capability to be used as a transmission alternative.

D5.4 Transpower will have to apply for approval should it wish to use further regulatory funding to continue operating in the demand side market once the testing programme has finished.

²⁹ These submissions are available on our website.